

## MULTISTAGE PROCESS FOR REMOVAL OF SULFUR FROM COMPONENTS FOR BLENDING OF TRANSPORTATION FUELS

### ABSTRACT OF THE INVENTION

5           Economical processes are disclosed for the production of fuels of reduced sulfur  
content from a feedstock, typically derived from natural petroleum, wherein the  
feedstock is comprised of limited amounts of sulfur-containing organic compounds as  
unwanted impurities. The processes involve integrated, multistage processes which  
10 include pretreatment of a light naphtha with a solid adsorbent to remove basic nitrogen  
containing compounds, chemical conversion of one or more of the sulfur-containing  
impurities to higher boiling products by alkylation, and removing the higher boiling  
products by fractional distillation. Advantageously, the processes include selective  
hydrogenation of the high-boiling fraction whereby the incorporation of hydrogen into  
15 hydrocarbon compounds, sulfur-containing organic compounds, and/or nitrogen-  
containing organic compounds assists by hydrogenation removal of sulfur and/or  
nitrogen. Products can be used directly as transportation fuels and/or blending  
components to provide, for example, more suitable components for blending into fuels  
which are more friendly to the environment.

20